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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PAIK, SANG YEOP

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 04/08/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,050

Applicant(s)

FRIEDHEIM, MAX

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19-21, 23-28 and 31-44 is/are rejected.
- 7) ☒ Claim(s) 18, 22, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11, 13-17, 19-21, 23-28 and 31-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedheim (US 5,471,556) or Friedheim (US 4,414,037) in view of Kishi et al (US 5,149,399) or Gamell (US 3,800,528).

Friedheim '556 or Friedheim '037 discloses a superheated vapor generator made of aluminum having a vapor generating space with a surface having grooves or etched/perforated surface, respectively. However, neither Friedheim '556 nor Friedheim '037 shows having a thermally conductive thermal element in the vapor generation space.

Kishi et al shows a vapor generating space within which a thermally conductive elements such as the thermally conductive elements made of ceramic materials or stainless steel are

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disposed therein to enhance the speed of the heating of the liquid. Gamell also shows a vapor or steam generating heat boiler with heat absorbing and thermally conductive bodies attached within the boiler. Gamell further shows that the outer shell of the heating vessel and the thermal bodies are made of the metals.

In view of Kishi et al or Gamell, it would have been obvious to one of ordinary skill in the art to adapt Friedheim '556 or Friedheim '037 with thermally conductive thermal element within the vapor generating chamber to further increase the heating and vaporization of the fluid.

With respect to claim 8, it would have been obvious to one of ordinary skill in the art to use stainless steel as the vapor generation surface and the aluminum as the thermal element since Friedheim '556 and '037 allows one of ordinary skill in the art to use the metal or other materials, including stainless steel, that are suitable to generate a good thermal conductivity and Kishi et al and Gamell also leave it to one of ordinary skill in the art to use the thermal bodies that are made of materials, including aluminum, that have good thermal conductivity.

With respect to claim 25, it would have been obvious to one of ordinary skill in the art to provide the thermal element in cylindrical configuration or any other shapes as long as such thermal elements provide the necessary conductivity to enhance the speed of heating and vaporizing the fluid.

With respect to claims 41-43, it would have been obvious to one of ordinary skill in the art to insert the thermal elements before assembling the vapor generator parts or after assembling the vapor generator parts since such would depend on the convenience of assembling process.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over A as applied to claim 1 above, and further in view of Sloan et al (US 6,299,076).

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Friedheim '556 or Friedheim '037 in view of Kishi et al or Gamell disclose the vapor generator claimed except the interior surface being smooth.

Sloan et al shows a vapor generator having an interior surface being smooth. In view of Sloan et al, it would have been obvious to one of ordinary skill in the art to adapt Friedheim '556 or Friedheim '037, as modified by Kishi et al or Gamell, with the interior surface having a smooth surface as an alternative surface form to also produce the steam.

Allowable Subject Matter

5. Claims 18, 22, 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on 703-308-1327. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

S. P. C.

Sang Y Paik
Primary Examiner
Art Unit 3742

syp
April 3, 2003